

170121

SOIL BORING INVESTIGATION IN
THE VICINITY OF FINLEY CREEK

JULY 27, 1987

SUBMITTED BY:

ERM-NORTH CENTRAL, INC.
102 WILMOT ROAD, SUITE 300
DEERFIELD, ILLINOIS 60015

1.0 INTRODUCTION

Multiple stream sampling events conducted by EPA during the RI/FS activities at ECC and NSL, as well as during the spring and early summer of 1987 by ERM and EPA revealed that ground water is likely not the source of observed impacts to Unnamed Ditch and Finley Creek. However, analytical results of samples collected from both the Unnamed Ditch and Finley Creek (Figure 1) do not define the sources or the pathway(s) for the contaminants measured in Finley Creek.

Sampling and stream flow measurements conducted by ERM-North Central during the early spring of 1987 documented the presence of volatile organic compounds in both the Unnamed Ditch and Finley Creek, south of the confluence with the Unnamed Ditch (Figure 2). The distribution of volatile organic compounds (VOC) in these surface waters indicates two separate source areas. This interpretation is supported by the distribution of apparently discrete zones of contamination in the surface water streams and the results of flow measurements. The flow in Finley Creek was measured to be approximately 50 times greater than the discharge from the Unnamed Ditch. Given the contaminant concentrations measured in the stream samples from the Unnamed Ditch and the expected dilution resulting from discharge to Finley Creek, the impact on Finley Creek downstream from the confluence of the two streams would be expected to be non-

detectible. This is supported by the analytical results from sampling point S5 (Figure 2).

VOC's were detected in samples collected from locations S4 and downstream. Based on the results from S5, these contaminants appear to enter Finley Creek between S4 and S5. Although EPA has proposed the source(s) for this contamination of Finley Creek to be ground water discharge to Finley Creek, it is believed that a source or sources in the surficial sediments immediately adjacent to Finley Creek, or a facilitated surface run-off pathway more likely account for these observations.

Subsequent sampling conducted by USEPA confirmed the distribution of VOC contamination. Subsequent soil gas and reconnaissance geophysical surveys along a portion of Finley Creek and the Unnamed Ditch, conducted by ERM-North Central, did not locate a concentrated source in the area surveyed.

2.0 SOIL BORING INVESTIGATION

ERM-North Central will conduct a detailed soil boring and sampling investigation on the west bank of Finley Creek, south of the Unnamed Ditch, between July 28 and August 7, 1987. The principal study area will be from surface water sample location S5 to location S3. Based on results of field screening and/or observations, the investigation will be expanded as needed to

define and delineate the source of VOC contamination to Finley Creek.

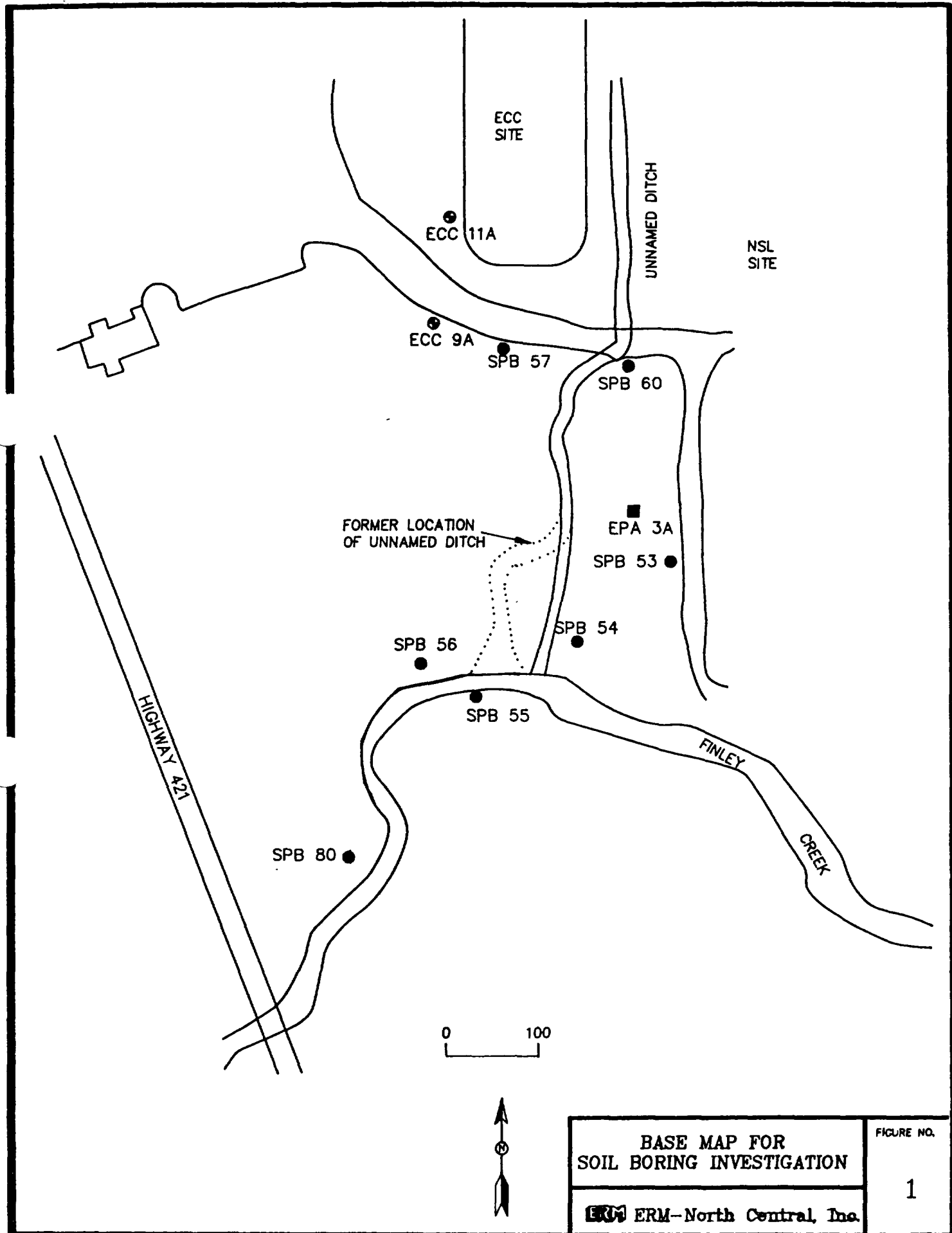
The primary area of focus for this soil boring investigation is delineated on Figure 3. Soil borings will be drilled to a total depth of approximately 10 feet along a line parallel to Finley Creek with soil borings on 10 to 15 foot centers. We anticipate being able to collect 2-ft split spoon samples every 2 feet. Each split spoon sample will be scanned utilizing an HNu photoionization detector and a composite sample from each 2 ft split spoon interval will be tested using the headspace technique. A one-quart jar will be filled approximately half way, allowed to warm, and the soil will be agitated. The HNu detector will then be used to measure total VOC concentration and headspace. In addition, an experienced geologist will log each boring and identify any zones of apparent discoloration or discontinuity.

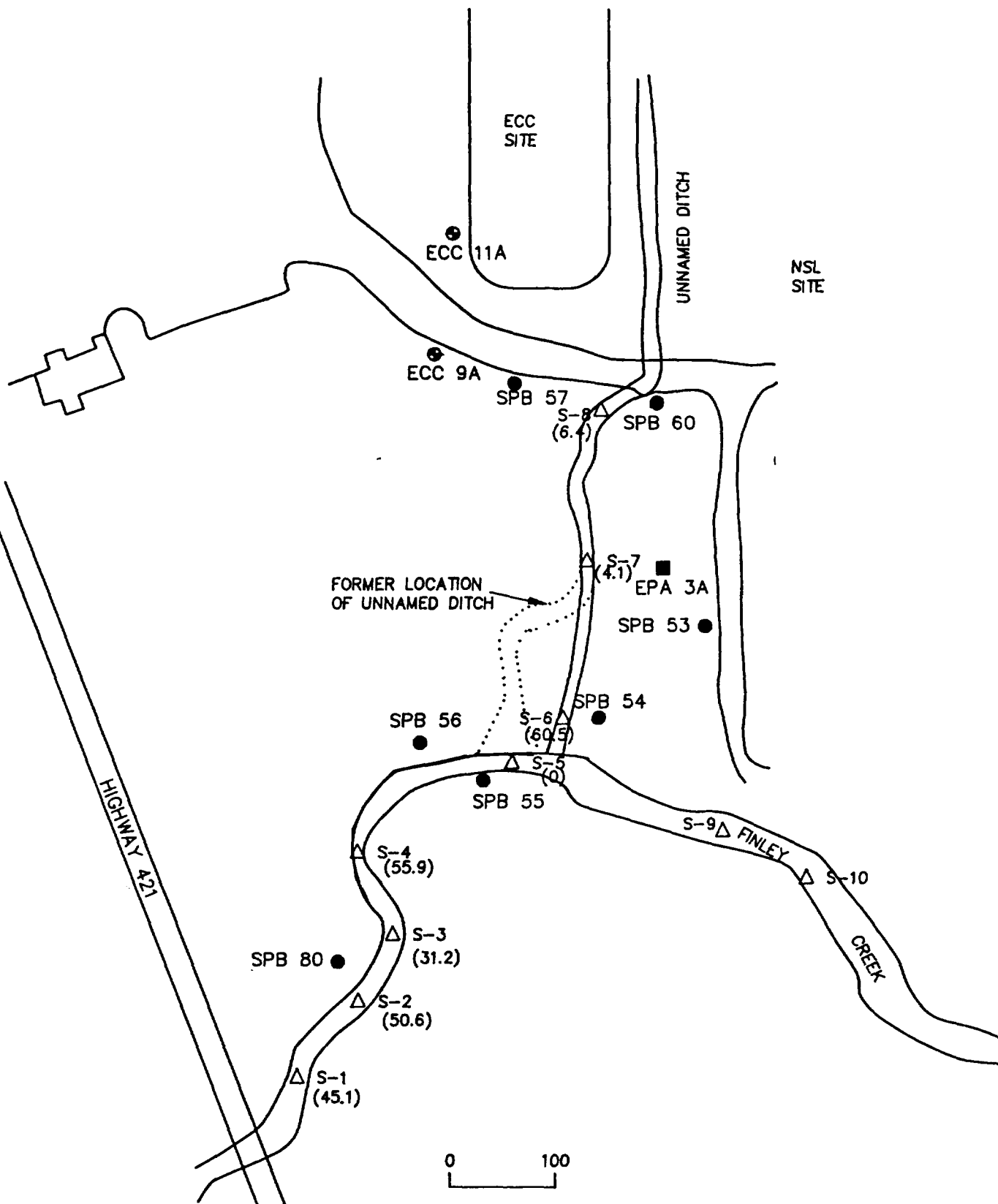
At selected locations along this traverse, and if the surficial sediments appear saturated, a temporary well point screen will be installed within the sand lens, sand will be placed around the screen and several feet of bentonite pellets placed back around the hole. As soon as sufficient water has collected in the well point, a sample will be taken and submitted to a laboratory for TOX analysis. These wells points will be considered temporary and will be removed within one week of the field work. Samples

will be collected from these wells using a peristaltic pump drawing the sample through teflon tubing.

3.0 REPORTING

All results from the investigation will be tabulated and presented in map format. If appropriate, headspace readings will be presented on depth and/or geologic horizons. Any samples collected for TOX analysis will be presented both in tabular and map form. Copies of laboratory reports of analyses will be included as an appendix. A geologic log for each soil boring will be provided and any significant features discussed as necessary. Finally, a complete discussion and interpretation of data will be presented. The field work will be completed by August 7, 1987. The report summarizing all findings will be submitted by August 21, 1987.





△ - SURFACE WATER SAMPLE LOCATION
(45) TOTAL VOC

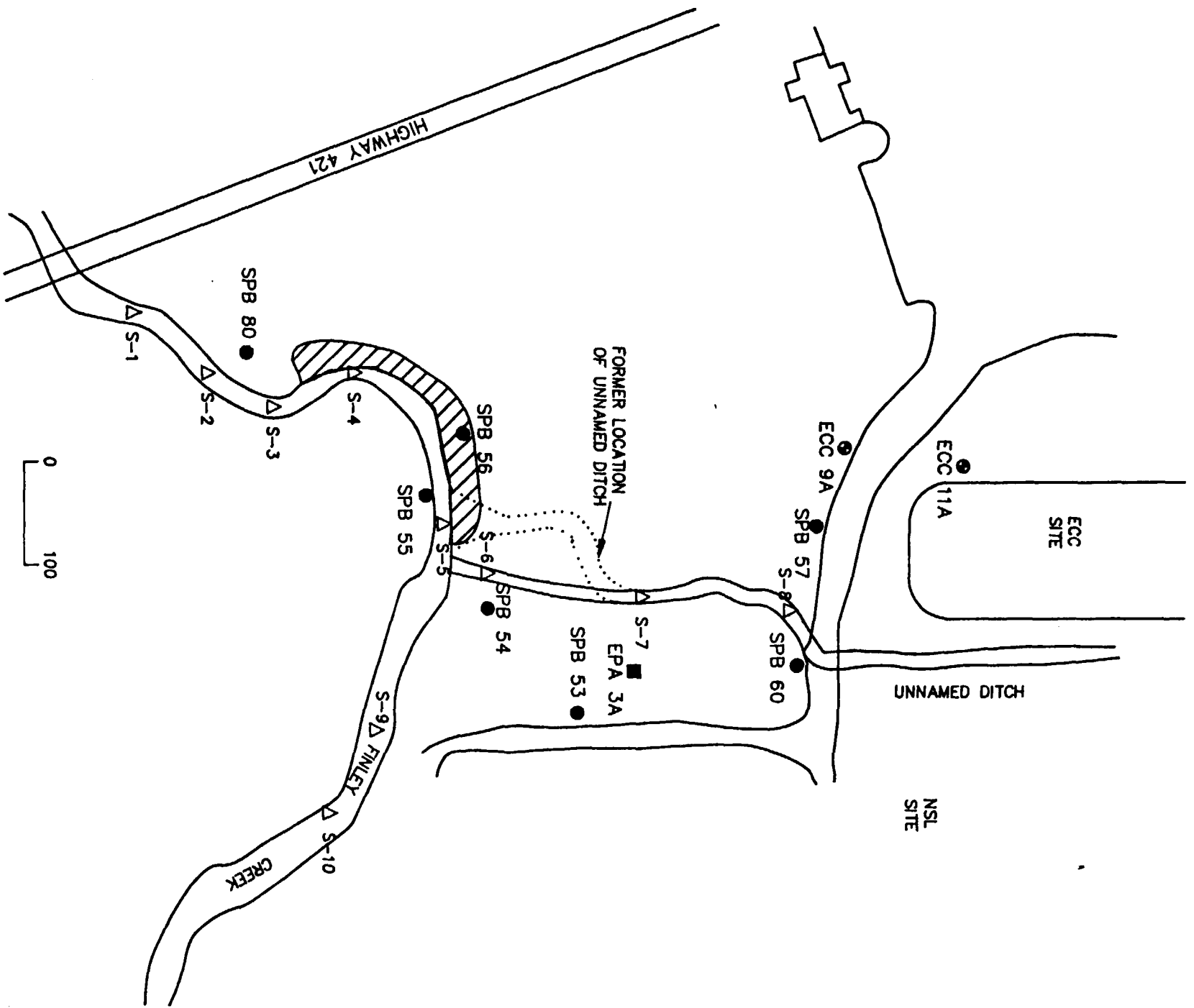


SURFACE WATER
SAMPLING LOCATIONS - ERM-NC



ERM ERM-North Central, Inc.

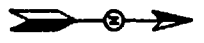
FIGURE NO.

2



0 100

 PRIMARY AREA OF INVESTIGATION
 Δ - SURFACE WATER SAMPLE LOCATION



AREA OF SOIL BORING INVESTIGATION	FIGURE NO. 3
EPA ERM-North Central, Inda	